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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,803	10/17/2003	Lawrence M. Cuprys	0717.2039-001	9675
21005 7590 09/06/2006			EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.			LIANG, REGINA	
530 VIRGINIA ROAD			ART UNIT	
P.O. BOX 9133			PAPER NUMBER	
CONCORD, MA 01742-9133			2629	

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,803

Applicant(s)

CUPRYS, LAWRENCE M.

Examiner

Regina Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 32-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31, 47-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/22/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II (claims 16-31, 47-62) in the reply filed on 7/17/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16-23, 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Son et al (US 5,917,459 hereinafter Son) in view of Sakata et al (US 6,945,652 hereinafter Sakata) and Yan (US 5,865,529).

As to claim 16, Fig. 3 of Son discloses a display system comprising a display device (LCD 13), a first light source (11) for emitting light; a first light collection lens system (12) for collecting the light emitted from the first light source and directing the light in a first beam of light to the display device for illuminating the images on the display device for viewing.

Son does not disclose the first light collection lens system comprising a hollow lens. However, Fig. 9 of Sakata teaches a projection display system comprising an LED light source (91a, 91b or 91c). Yan teaches an LED light source comprising a hollow lens (12 in Figs. 1. 2) for directing the light pattern that is emitted from the LED light source. Thus, it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify the display system of Son to have an LED light source as taught by Sakata and to have a hollow lens for directing the light emitted from the LED light source as taught by Yan so as to provide a lower voltage operation display system and to minimize the uneven illumination (col. 1, lines 38-40, 44-45 of Yan).

As to claim 17, Son teaches the display device (13) is an LCD.

As to claim 18, Sakata teaches the light source is an LED.

As to claim 19, Figs. 1 and 2 of Yan shows the hollow lens (hemispherical shaped lens 12) is substantially spherical with an opening on one side.

As to claim 20, Son as modified by Sakata and Yan does not specifically disclose the hollow lens has spherically shaped inner and outer surfaces with centers that can be offset from each other. However, the hollow lens (12) of Yan having a thickness between inner and outer surfaces, thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize the hollow lens of Yan has hemispherical shaped inner and outer surfaces with centers that are offset from each other. Thus, Son as modified by Sakata and Yan would have the hollow lens as claimed.

As to claim 21, Fig. 3 of Son teaches a projection lens (2) for projecting images from the LCD display.

As to claim 22, Fig. 3 of Son teaches a screen (14) for displaying the images projected by the projection lens (2).

As to claim 23, Fig. 3 of Son teaches the first light collection lens system comprising a condenser lens (12) for condensing the first beam of light.

Claims 47-54, which are method claims corresponding to the above apparatus claims 16-23, are rejected for the same reasons as stated above since such method "steps" are clearly read on by the corresponding "means".

4. Claims 24-31, 55-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Son, Sakata and Yan as applied to claims 23, 54 above, and further in view of Hirata et al (US 6,894,729 hereinafter Hirata).

As to claims 24 and 55, Son as modified by Sakata and Yan does not disclose a dispersion lens. However, Hirata teaches a projection type display system comprising dispersion lens (FL2 in Figs. 3 and 4 for example, and see col. 6, lines 32-52) positioned adjacent to the LCD (7) for dispersing the light beam on the LCD (7). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display system of Son as modified by Sakata and Yan to have a dispersion lens as taught by Hirata "in order to focus images clearly at any part of the screen so as to obtain brighter images" (col. 6, lines 53-55 of Hirata).

As to claims 25, 56, 30, 61, Fig. 9 of Sakata teaches a second LED light source and a third LED light source (91a, 91b, 91c), the light from the first, second and third light sources being different colors, Yan teaches the LED light source comprising a hollow lens. Thus, Son as modified by Sakata and Yan would have first, second and third light collection lens system comprising hollow lens as claimed. Fig. 9 of Sakata also teaches a condenser lens for condensing the first, second and third beam of light, and a beam splitter for directing the first, second and third beam of light to the LCD.

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As to claims 26, 57, Fig. 3 of Son teaches a mirror (3) for directing images projected by the projection lens (2) onto the screen (14).

As to claims 27-29, 58-60, Son as modified does not explicitly disclose one of the light sources emits green light at about 530 nm and the other emits red light at about 645nm (claims 27, 58), or a housing of the display system is about 3.5 inches lone, 1.5 inches high and 1 inch wide (claims 28, 59), or the screen is about 1 x 1.3 inches and the displayed images have a dimension of at least 3 x 4 inches (claims 29, 60). However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display system of Son as modified to have the limitation as claimed, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As to claims 31, 62, Sakata teaches the different colors are green, red and blue.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

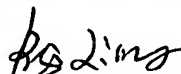
Hahl (US 7,034,778) and Parker et al (US 2004/0066547).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Regina Liang
Primary Examiner
Art Unit 2674

9/1/06